



RS300-E6 Series

Configuration Guide

E5084

First Edition V1
September 2009

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Revision history

Revision	Revision history	Date
V1	First release of RS300-E6 Series configuration guide	September 2009

Safety information

Electrical Safety

- Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.
- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing any additional devices to or from the system, contact a qualified service technician or your dealer. Ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you service.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your dealer.

Operation Safety

- Servicing of this product or units is to be performed by trained service personnel only.
- Before operating the server, carefully read all the manuals included with the server package.
- Before using the server, make sure all cables are correctly connected and the power cables are not damaged. If any damage is detected, contact your dealer as soon as possible.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Place the server on a stable surface.



This product is equipped with a three-wire power cable and plug for the user's safety. Use the power cable with a properly grounded electrical outlet to avoid electrical shock.

Lithium-Ion Battery Warning

CAUTION! Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

CD-ROM Drive Safety Warning

CLASS 1 LASER PRODUCT

Heavy System

CAUTION! This server system is heavy. Ask for assistance when moving or carrying the system.

Chapter 1

This chapter describes the key features of RS300-E6 Series. It includes the product overview and general specifications.

Product introduction

1.1 Key features

Green Server with High Expandability & Upgradability

Support Up-to-date Intel CPU

The RS300-E6/PS4 is built with LGA Socket 1156, support 45nm Quad Core UP CPU and dual-channel DDR3-1333, and it is also designed ready for next-gen 32 nm Dual Core UP CPU to allow effortless migration to Intel's new platform and therefore prolong your investment. The ASUS proprietary CPU heat-pipe will deliver high thermal performance for stable computing applications.

High I/O Expandability

The RS300-E6 supports 2+1 I/O expansion slots in the 1U chassis, including one PCI-E x8 slot to support low-profile/half-length card, one PCI-E x16 slot to support full-height/half-length card, and another slot designed for ASUS optional PIKE card, which brings seamless upgrade to SAS storage and RAID protection.

Green Design with 80+ PSU & Intelligent Fan Control

With current trends leaning towards power efficiency, the RS300-E6/PS4 is equipped with 80+ PSU to reduce the power loss and power consumption, and save power bill for users. The ASUS intelligent FAN technology will optimize the total FAN power and acoustic level to create a pleasant working environment for customers.

Optional ASUS PIKE for Demand on Upgradability

In order to upgrade from SATA storage to SAS directly, ASUS recommends customers to use its optional PIKE Upgrade Kit, which is compatible with Intel® XEON 5500 & 3400 Series platform products. With PIKE, slim-sized and flexible storage options for customers can be achieved when upgrading directly to SAS RAID with multiple I/O solutions, without sacrificing expansion capabilities. Now maximize your I/O performance and data protection in second!

Remote Management Solution ^V ASUS ASMB4 iKVM

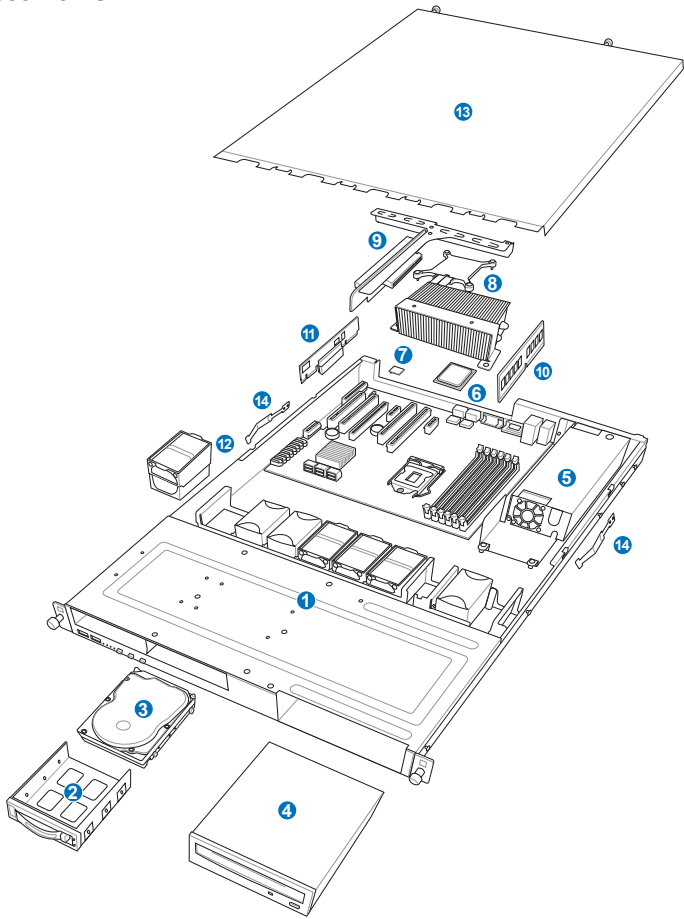
The optional ASMB4-iKVM upgrade kit provides remote real-time full control access to the system based on BIOS-level by keyboard, video monitor and mouse (KVM over Ethernet) from any local computer anywhere, anytime.

Save Effort with Auto-install CD

With the auto-install support CD, you don't need to wait and click "next" step by step, as the user's preferences are pre-configured in the CD. As well, the correct device drivers have been installed properly, and it's not necessary to update device drivers in OS, which will save time and effort of MIS.

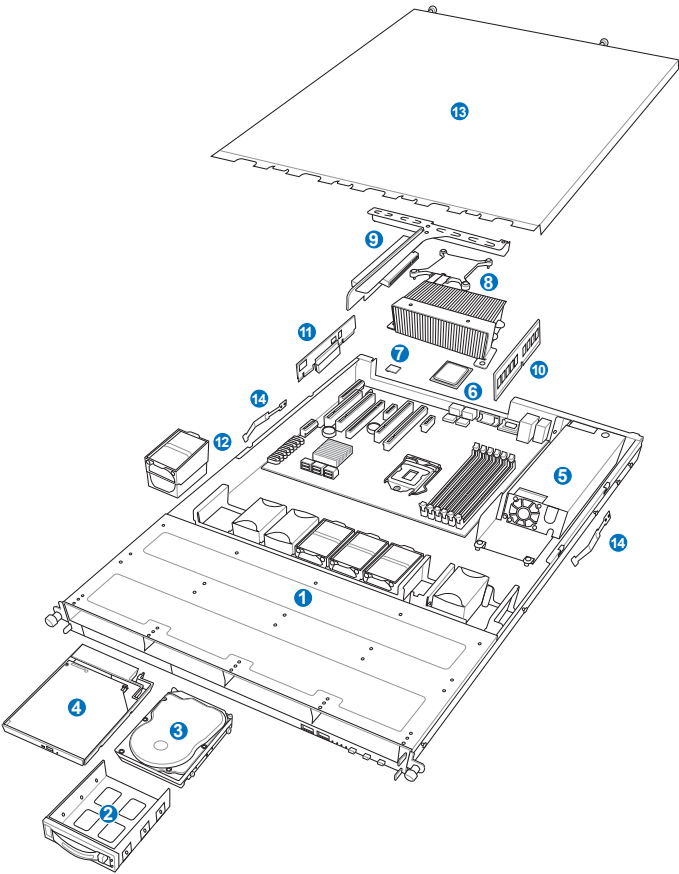
1.2 System overview

RS300-E6/PS2



Items	Items
1. Front cover	2. Hard disk drive bays
3. Hard disk drive	4. Optical disc drive
5. 350W Single Power Supply	6. CPU
7. ASMB4-iKVM controller card	8. CPU heatsink
9. PCI-E 2.0 riser card	10. DDR3 DIMM
11. ASUS PIKE SAS controller card	12. System fans
13. Top cover	14. Friction Rail fixing latches

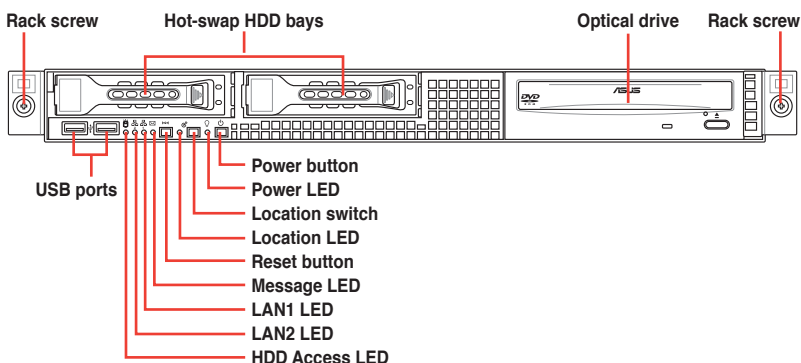
RS300-E6/PS4



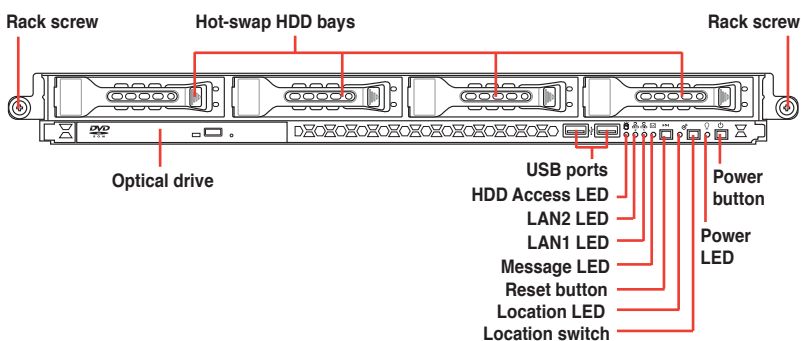
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11. ASUS PIKE SAS controller card	12. System fans
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1.3 Front panel features

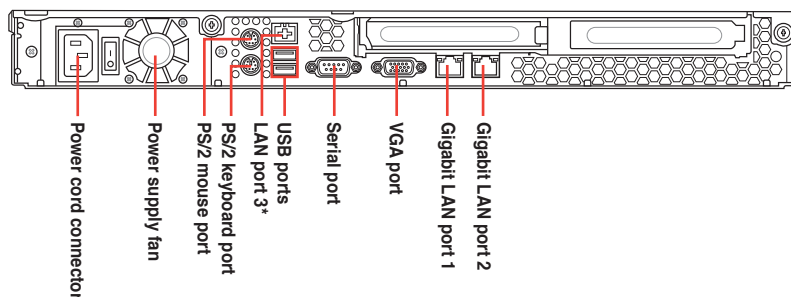
RS300-E6/PS2



RS300-E6/PS4



1.4 Rear panel features



1.5 System specifications

Model Name		RS300-E6/PS2	RS300-E6/PS4
Processor / System Bus		1 x Socket LGA1156	
		Quad Core Intel Xeon 3400 series Server Processor Quad Core Intel Core i7-800 series Desktop Processor* Quad Core Intel Core i5-700 series Desktop Processor* Dual Core 32nm CPU design Ready * The Core i7/i5 series desktop processors support DDR3 1333/1066 unbuffered DIMM with non-ECC only.	
Core Logic		Intel® 3420 PCH	
ASUS Features	Smart Fan	√	
	ASWM2.0	√	
Memory	Total Slots	6/4 (Lynnfield / Clarkdale) (2 Channels)	
	Capacity	Maximum up to 32GB (RDIMM) (Lynnfield) Maximum up to 16GB (UDIMM) (Lynnfield / Clarkdale)	
	Memory Type	DDR3 1333/1066 Reg DIMM/Unbuffered DIMM with ECC	
	Memory Size	1 GB, 2GB, 4GB, 8GB (RDIMM) 1 GB, 2GB, 4GB (UDIMM)	
Expansion Slots	Total PCI/PCI-X/PCI-E Slots	2	
	Slot Type	1 x PCI-E 2.0 x16 slot (x8 link) (Full-Height/HL) 1 x PCI-E 2.0 x8 slot (x8 link) (Low profile/HL)	
	Additional Slot 1	-	1 x PIKE Slot for Storage Enhancement
Storage	SATA Controller	Intel® 3420: 2 x SATA2 300MB/s ports Intel Matrix Storage (for Windows only) - Supports software RAID 0 & 1 LSI MegaRAID (for Linux / Windows) - Supports software RAID 0 & 1	Intel® 3420: 4 x SATA2 300MB/s ports Intel Matrix Storage (for Windows only) - Supports software RAID 0, 1, 5 & 10 LSI MegaRAID (for Linux / Windows) - Supports software RAID 0, 1 & 10

(continued on the next page)

Model Name		RS300-E6/PS2	RS300-E6/PS4
Storage	SAS Controller	-	<ul style="list-style-type: none"> - ASUS PIKE 1064E 4-port SAS RAID card - ASUS PIKE 1078 8-port SAS HW RAID card - ASUS PIKE 6480 8-port SAS RAID card
HDD Bays	I = internal A or S = hot-swappable	2 x Hot-swap 3.5" HDD Bays	4 x Hot-swap 3.5" HDD Bays
Networking	LAN	2 x Intel® 82574L + 1 x Mgmt LAN	
Graphic	VGA	Aspeed AST2050 8MB	
Auxiliary Storage FDD / CD / DVD		1 x 5.25" Optical Device Bay (Options: No ODD / DVD-ROM / DVD-RW)	1 x Slim-type Optical Device Bay (Options: No ODD / DVD-ROM / DVD-RW)
Onboard I/O		1 x External Serial Port 3 x RJ-45 ports (1 for ASMB4-iKVM) 4 x USB 2.0 ports (Front x 2, Rear x 2) 1 x VGA port 1 x PS/2 keyboard port 1 x PS/2 mouse port	
OS Support		Windows® Server 2008 Enterprise 32 / 64-bit Windows® Server 2003 R2 Enterprise 32 / 64-bit RedHat® Enterprise Linux AS5.0 32 / 64-bit SuSE® Linux Enterprise Server 10 32 / 64-bit (Subject to change without any notice)	
Anti-virus Software		Optional anti-virus CD Pack	
Management Solution	Out of Band Remote Hardware	Optional ASMB4-iKVM for KVM-over-IP support	
	Software	ASUS ASWM 2.0®	
Dimension (HH x WW x DD)		615mm x 444mm x 43.4mm	
Net Weight Kg (CPU, DRAM & HDD not included)		15 Kg	
Power Supply		350W (80+) Single Power Supply	
Power Rating		Input: 100–240V, 7–3.5A, 50–60Hz, Class I	
Environment		Operation temperature: 10°C–35°C / Non operation temperature: -40°C–70°C	
		Non operation humidity: 20%–90% (Non-condensing)	

*Specifications are subject to change without notice.

Chapter 2

This chapter lists the key components and optional accessories for the server system.

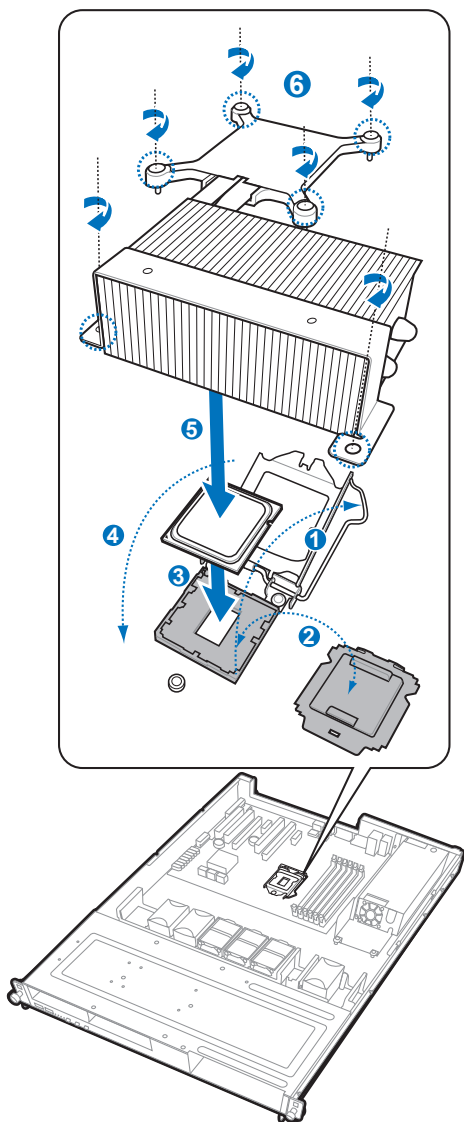
Components

2.1 Upgrading CPU and CPU heatsink

ASUS RS300-E6 Series supports Intel® Quad-Core / Dual-Core Xeon® 3400 series / Desktop Core i7 / i5 series processors.

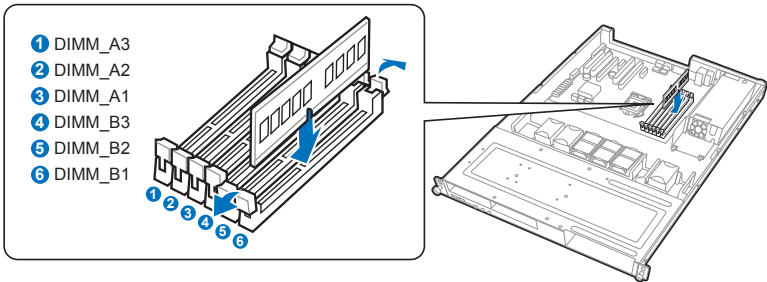


The Core i7 / i5 series desktop processors support DDR3 1333/1066 unbuffered DIMM with non-ECC only.



2.2 Upgrading system memory

The motherboard comes with six (6) Double Data Rate 3 (DDR3) Dual Inline Memory Modules (DIMM) sockets.



You may install 1 GB, 2 GB, 4 GB, 8 GB Registered, or 1 GB, 2 GB, 4 GB Unbuffered with ECC/Non-ECC DDR3 DIMMs into the DIMM sockets using the memory configurations in this section.

RDIMM*				
DIMM Slot Per Channel	DIMM Populated per Channel	DIMM Type	Speed	Rank per DIMM
3	1	Registered DDR3 ECC	1333	Single Rank, Dual Rank
3	1	Registered DDR3 ECC	1066	Quad Rank
3	2	Registered DDR3 ECC	1333	Single Rank, Dual Rank
3	2	Registered DDR3 ECC	800**	Quad Rank
3	3	Registered DDR3 ECC	800**	Single Rank, Dual Rank
UDIMM				
DIMM Slot Per Channel	DIMM Populated per Channel	DIMM Type	Speed	Rank per DIMM
2	1	Unbuffered DDR3	1333	Single Rank, Dual Rank
2	2	Unbuffered DDR3	1333	Single Rank, Dual Rank

*Support Low Voltage DIMMs; **Down from 1066 or 1333 MHz DIMM

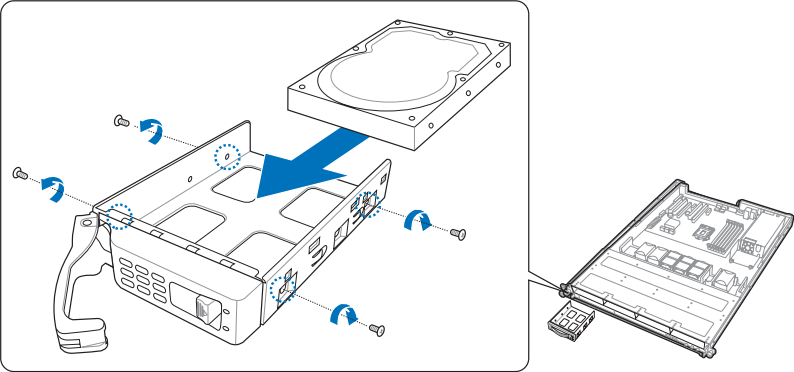


- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor. DO NOT combine RDIMM and UDIMM.
- The motherboard supports x8 DRAM Only and x4 & x16 DRAM are not supported

Order P/N	Description
90-S000I0300T	DDR3 1333 ECC REG 1G SINGLE PACK
90-S000I0310T	DDR3 1333 ECC REG 2G SINGLE PACK
90-S000I0320T	DDR3 1066 ECC REG 1G SINGLE PACK
90-S000I0330T	DDR3 1066 ECC REG 2G SINGLE PACK
90-S000I0340T	DDR3 1333 ECC UNB 1G SINGLE PACK
90-S000I0350T	DDR3 1333 ECC UNB 2G SINGLE PACK
90-S000I0360T	DDR3 1066 ECC UNB 1G SINGLE PACK
90-S000I0370T	DDR3 1066 ECC UNB 2G SINGLE PACK
90-S000I0380T	DDR3 1333 ECC REG 1G (10 in 1)
90-S000I0390T	DDR3 1333 ECC REG 2G (10 in 1)
90-S000I0400T	DDR3 1066 ECC REG 1G (10 in 1)
90-S000I0410T	DDR3 1066 ECC REG 2G (10 in 1)
90-S000I0420T	DDR3 1333 ECC UNB 1G (10 in 1)
90-S000I0430T	DDR3 1333 ECC UNB 2G (10 in 1)
90-S000I0440T	DDR3 1066 ECC UNB 1G (10 in 1)
90-S000I0450T	DDR3 1066 ECC UNB 2G (10 in 1)

2.3 Upgrading hard disk drives

The system supports eight hot-swap SATAII/SAS hard disk drives.



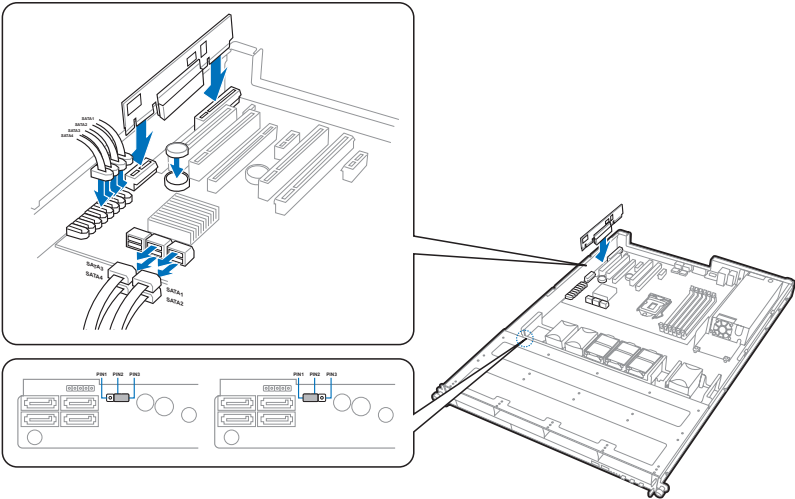
We recommend that you install identical drives of the same model and capacity for RAID configuration.

Order P/N	Description
90-S000H6210T	HDD SAS 450G 3.5" with tray (Single Pack)*
90-S000H6220T	HDD SAS 300G 3.5" with tray (Single Pack)*
90-S000H6230T	HDD SAS 146G 3.5" with tray (Single Pack)*
90-S000H6240T	HDD SATA2 1T 3.5" with tray (Single Pack)
90-S000H6250T	HDD SATA2 750G 3.5" with tray (Single Pack)
90-S000H6260T	HDD SATA2 500G 3.5" with tray (Single Pack)
90-S000H6270T	HDD SATA2 320G 3.5" with tray (Single Pack)
90-S000H6280T	HDD SATA2 250G 3.5" with tray (Single Pack)

*SAS hard disk drives are supported by RS300-E6/PS4 only.

2.4 Installing ASUS PIKE SAS RAID card

The ASUS PIKE SAS RAID card allows users to create RAID 0, 1, 5, 10 and 50 from SAS hard disk drives connected to the SAS connectors on the motherboard.

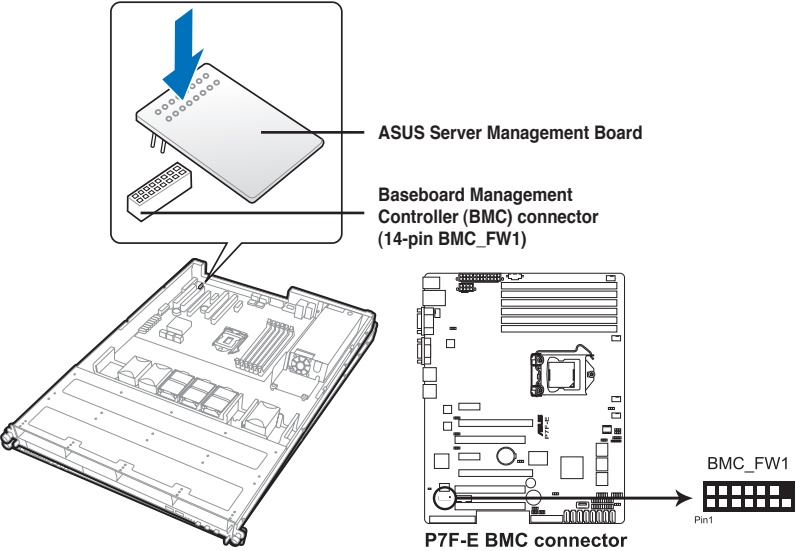


Move the **SGPIO_SEL1** jumper on the SATA/SAS backplane to 2–3.

Order P/N	Description
90-C1SCM0-00UAY00Z	PIKE 1064E (4-port SAS support Firmware RAID 0,1,1E)
90-C1SDB0-00XBN00Z	PIKE 6480 (8-port SAS support Firmware RAID 0,1,10,5) (10 in 1)
90-C1SCN5-00UAY00Z	PIKE 1078 (8-port SAS support Hardware RAID 0,1,10,5,50,6,60)

2.5 Installing ASUS Server Management Board

ASUS Server Management Board is an Intelligent Platform Management Interface (IPMI) 2.0-compliant board that allows users to monitor, control and manage a remote server from the local or central server in local area network (LAN).

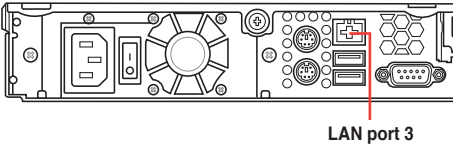


ASMB4-iKVM

- Monitor the running status of major components via LAN or Serial Port, such as CPU and memory utilization, storage capacity and networking transfer rate.
- Advanced server management functions including “remote power on/off/reset”, “remote control via SOL (Serial-over LAN)” and “remote SEL (system event log reading when the system is out-of-band)”.
- Support Dynamic Host Configuration Protocol (DHCP), which avoids manually assigning IP address by setting DHCP mode to receive IP address automatically.



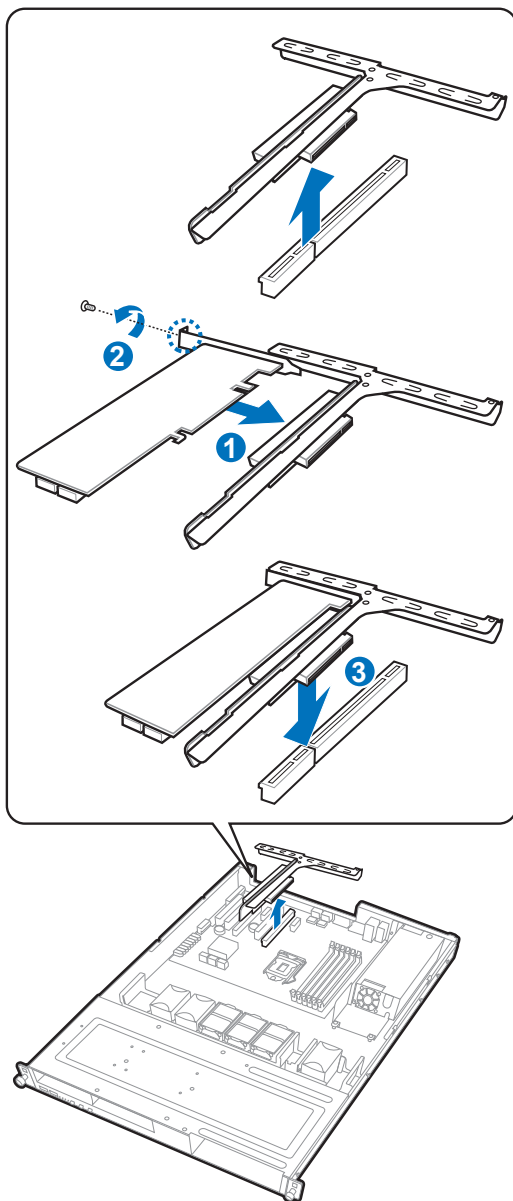
Use the LAN3 port for server management.



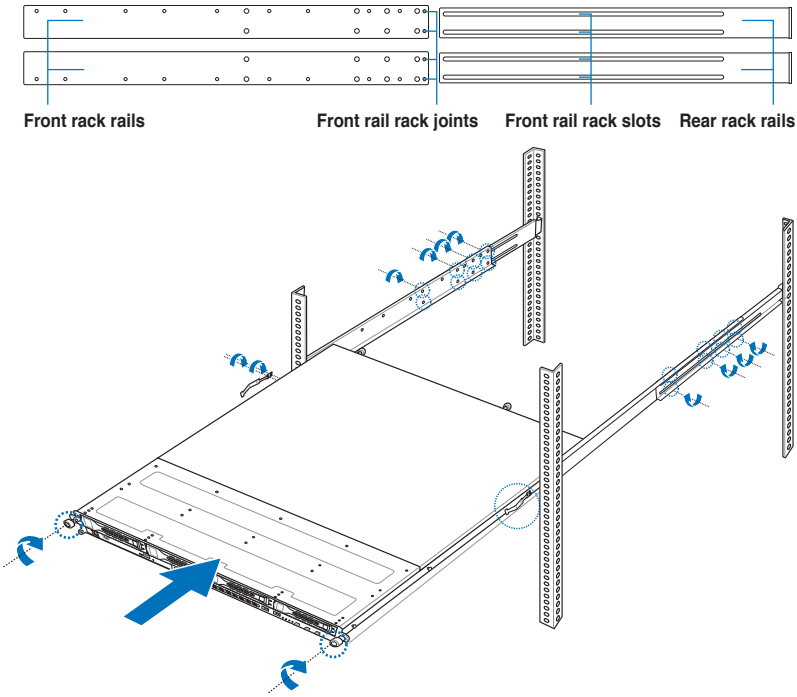
Order P/N	Description
90-C1SD80-00UAN00Z	ASMB4-iKVM Module (6 in 1)

2.6 Installing PCI express cards

The system supports PCIe x16 cards installation on the PCIe riser card brackets.



2.7 Friction rail kit



2.8 OS support list

Operating System	Version
Microsoft Windows	Windows Server 2003 Standard/Enterprise 32/64 Edition SP2 Windows Server 2008 Standard/enterprise 32/64 Edition Windows Server 2008 Foundation 32/64 Windows Vista SP1 (Installation Only) Windows XP Professional SP3 (Installation Only)
Red Hat Enterprise Linux	RHEL AS 4.0 UP7 32/64 bit RHEL AS 5.0 UP3 32/64 bit
SuSE Linux Enterprise Server	SLES 10 SP3 32/64 bit SLES 11 32/64 bit
Linux	Fedora Core 10 (Installation Only) Free BSD 7.1 (Installation Only)
Virtualization	VMWare ESX4.0 VMWare ESX4.0i

Order P/N	Description
90-S00SW7140T	Windows® Server 2008 STD 64-bit ENG
90-S00SW7150T	Windows® Server 2008 STD 64-bit TCH